A-0U01-000061

ER PROGRAM DATA ASSESSMENT SUMMARY REPORT FORM

Samp 56-8	ole Numbers_TB(1/13/89	7), FB1/13/89), 2-87, 5-87, 52-87, TB(1/2) Tritium Analyse Data Asse		62-86, 45-87, TB(1/26/89),
56-86 FB(1	ole Numbers <u>TB(1/13/89</u> 6, D56-86, 10-74, 10-74D /26/89), 9-74, 9-74D Holding Times	7), FB1/13/89), 2-87, 5-87, 52-87, TB(1/2) Tritium Analyse Data Asse	4-87, 69-86, TB(1/17/89), FB(1/24/89), FB(1/24/89), 3-87, 8-	1/17/89), 70-86, 70-86D, 62-86, 45-87, TB(1/26/89),
56-86 FB(1	6, D56-86, 10-74, 10-74D. /26/89), 9-74, 9-74D Holding Times	Tritium Analyse Data Asse	es by Liquid Scintillation essment Summary	62-86, 45-87, TB(1/26/89),
2.	-	Data Asse	essment Summary	S
2.	-		Comments	S
2.	-	v		
	Initial and Continuing			
3	Calibrations	v		
٠.	Blanks	v		
4.	Lab Replicates	<u> </u>		
5.	Lab Control Samples	<u> </u>		
6.	Quench and Efficiency	v		
7.	Sample Calculations	V		
8.	Overall Assessment	V	-	
	 V = Data had no problems. A = Data acceptable but qualified due R = Data rejected. X = Problems, but do not affect data. 	to problems.		
Data (Quality:Data contained in	this batch were reviewed	d and found to be valid.	
			ADMIN RECORD	"REVIEWED FOR CLASSIFICATION
			- WILLIA KECORD	By R. E. Hoffman Date 7-(1-40
			REVIEWED FOR CLASSIFICATION L By George H. Settor	ICNI

ction Items: None.	
:	
omments: None.	~
	· · · · · · · · · · · · · · · · · · ·
ote: Data Summary Tables are attached.	
bet. Data bummary rables are attached.	
Mail Ans	2 20 00
Maulyn Ayers	3-20-90 Date

RADIOCHEMICAL ANALYSIS ANALYTICAL RESULTS (PCVL)

TABLE #: E89-0052

SITE NAME: Area 2 - Hillside

Sample Number Oogs-TB Oogs-TB Oogs-TB Oogs-TB Oogs-TB Oogs-TB Oogs-TB Oogs-TB-GB ITT7RB9 ITTTRB9 ITTTTRB9 ITTTRB9 ITTTRB9 ITTTRB9	Sample Location		<u>1</u> B			æ			2-87			4-87		9	98-69		ETT.	m		FB			99 ₀ 2	g g		70-86D	۵	
1/13.089 1/13.089	Sample Number		8	ΒĻ.		0052-	FB		0052-	2-87		0052-4	-87	۴	052-69	8	ð	352-TB		8	52-FB		905	2-70-86		9052	70-86D	
Matier Water Water <t< th=""><th>Sample Date</th><th></th><th>1/13/</th><th>8</th><th></th><th>1/13/2</th><th><u>@</u></th><th></th><th>1/13/8</th><th>6</th><th></th><th>1/13/85</th><th></th><th>-</th><th>1/13/89</th><th></th><th>-</th><th>17/89</th><th></th><th>₹</th><th>2/89</th><th></th><th>ξ</th><th>8</th><th></th><th>1/17/8</th><th>9</th><th></th></t<>	Sample Date		1/13/	8		1/13/2	<u>@</u>		1/13/8	6		1/13/85		-	1/13/89		-	17/89		₹	2/89		ξ	8		1/17/8	9	
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POLIVE Val. +/+ DO Val. +/+ DO<		Ы	_																	-			-			_		
2 1	Parameter	PCIVE	Val.						_	-/+			+			1							_			_		8
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1	Gross Beta	4														-			_	\vdash		_	_		_	_	_	
1	Total Strontlum	-														-				-		-	_	L				
1 400 230 U V 220 U V 230 U V 230 U V 240 U V 240 U V 250 U V	Total Cesium	-		_	<u> </u>		_			L				-	 -	-	-	-	H	\vdash	-		_	L	L			
400 230 U V 230 U V 240 U V 250 U V 230 U V 270 U 0.6 0.6 0.0 <td< td=""><td>Radium 228</td><td>-</td><td></td><td></td><td>_</td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>\vdash</td><td></td><td></td><td>H</td><td></td><td></td><td>_</td><td></td><td>_</td><td>_</td><td></td><td></td></td<>	Radium 228	-			_	-											\vdash			H			_		_	_		
	Tritium	400	230		>		_	>	230 ∪		,	230 U			340 ∪	-		20 ח	-	1	Do		l) D	>		L	>
	Uranium 234 & 233	9.0		_												-	H			-	-	_	_	_	L			
	Uranium 235	9.0	_	_											-		H			_	_	L	_	L	L	_	_	
	Uranium 238	9.0			_												_			-	-		L	L	_			L
	Plutonium 239 & 240	0.01			L	_									-					-			 -	_	_		L	
	Americium 241 & 242	10.0																										L
Gamma scan Other tsotopes	Radium 226	0.05																		H	\dashv	-		Н				
Other isotopes	Gamma scan			_	-	4		_							1		1			-								
	Other Isotopes												_		_						_		_		_			

Data Qualifier g >

Valid

Acceptable with qualifications

Rejected

Value is rejected due to other contractual criteria examined during the quality control review Quantitiation is approximate due to limitations identified during the quality control review

Indicates the parameter was not detected above the Instrument Quantitation Limit

Value is rejected due to blank contamination identified during the quality control review

Detection Limit in PicoCuries per Liter (pCiA.)

0052L/rk44

EG&G ER Program Rocky Flats Plant

RADIOCHEMICAL ANALYSIS ANALYTICAL RESULTS (PCI/L)

TABLE #: E89-0052

Page 2 of 4

SITE NAME: Area 2 - Hillside

Sample Location	98 93 93	9		200	D56-86		10-74			10-74D	_	S	5-87		25	52-87		<u>p</u>			æ			3-87		
Sample Number	900	0052-56-86	g	905	0052-D56-86	မ	800	0052-10-74		0052-10-74D	0-74D	0	0052-5-87	1	8	0052-52-87	4	8	0052-TB		0052-FB	8		0052-3-87	18	Ī
Sample Date	1/17/89	68/		1/1,	1/17/89		1/17/89	6		1/17/89		-	1/17/89		+	1/17/89		12	1/24/89		1/24/89	6		1/24/89		Γ
Matrix	Water	ЭĘ		Water	er		Water			Water		>	Water		Š	Water		Water	ē		Water			Water		
DI				_											\vdash			-								
Parameter pCVL	L Val.		+/- DQ	O Val.	-/+ 'I	Ø	Val.	-/+	g	Val.	-/+	8	Val.	_ -/÷	<u>></u>	Val. +	⊠ *	Ze Ver	· +/-	g	Val.	+	8	Val.	‡	g
Gross Alpha	2	_	_													_	_		_							
ss Beta	4	-				_						-	-	_	-	-	-	<u> </u>	_	L	L	L				
Total Strontium	-	-	L		_	_									L	-	_	_	_	L						
Total Cesium	-	_	-					_					_	_	-	-	_	-	L	L					T	
Radium 228	-	L	-	-			_	_					_	_	H	_	_	-	L	L	_					
ritium	400 220 U	n	1	V 220 L	n	>	230 U		۸ ا	260 U		۷ 2	230 U		V 230 L	nο	^	, 220 U	n	>	0 2 3 0 7		>	250 U		>
Jranium 234 & 233	9.0					Ц									H		L	H								
Jranium 235	9.0	_	H		_								_		-		-	L	_		L	L			_	
Jranium 238	9.0	_				_							_			_		L	_		L					
	0.01														H			\vdash								
	0.01	_																_								Γ
	0.05					Н								Н	H	H	H	Н								
Gamma scan		-	-												\dashv	\dashv		\dashv	\dashv							
Other Isotopes			_													_										

Indicates the parameter was not detected above the Instrument Quantitation Limit

Quantitation is approximate due to limitations identified during the quality control review

Value is rejected due to other contractual criteria examined during the quality control review

Value is rejected due to blank contamination identified during the quality control review

. Detection Limit in PicoCuries per Liter (pCi/L)

EG&G ER Program Rocky Flats Plant

0052L/rk44

Acceptable with qualifications

Rejected

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Data Qualifier

Valid

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RADIOCHEMICAL ANALYSIS ANALYTICAL RESULTS (PCI/L)

Page 3 of

TABLE #: E89-0052 SITE NAME: Area 2 - Hillside

Sample Location		8-87			62-86			45-87		П	ΤΒ		۳	FB		9	9-74		િક	9-74D		Reak	Reagent Blank	놀	Reage	Reagent Blank	
Sample Number	١	0052-8-87	8-87		0052-62-86	2-86		0052-45-87	78-5	Ī	0052-TB	<u>«</u>	0	0052-FB		ğ	0052-9-74	J	8	0052-9-74D	٥	L					
Sample Date		1/24/89	6		1/24/89	6		1/24/89		Γ	1/26/89		F	1/26/89		=	1/26/89		1/2	1/26/89		L			L		
Matrix	ber .	Water			Water			Water			Water		-	Water		≥	Water		×	Water		Water	5		Water		
	Ы												-						H			_			L		
Parameter	Z Z	Val.	+	8	\ Val	+	8	Val.	+	g	Val.	+	8	Val.	-	8	Val.	□	s g	Val.	od -/+	Kar Var	‡		Val.	‡	
Gross Alpha	2											\mid	-	-	H	L	H	-	\vdash	\vdash	-	_	_	L			
Gross Beta	4													-	H	\vdash	-	-	\vdash	-	-			L		Ĺ	
Total Strontium	-									Г		-		-	-	\vdash	-	\vdash		L	L		-				
Total Cesium	-												\vdash	H		-	-	-	-	-		L	_				
Radium 228	-		_									\mid	<u> </u>	-	-	-	-	-	-	-	_	_	_	L			
Tritium	8	400 230 U		>	D 022		>	230 ∪		>	240 U		>	240 U	-	2	240 ∪	É	V 240 U	nc		V 240 U	5		240 ∪		
Uranium 234 & 233	9.0		_	L								-		-		\vdash	-	-	-	-	-	L			L		
Uranium 235	9.0			_										-	H	\vdash		-	\vdash	-				_	L		
Uranium 238	9.0													-	\vdash	-	\vdash	-	\vdash	_	-	_	L	L	L		
Plutonium 239 & 240	0.01									Г					_	-		-	-	-		_					
Americium 241 & 242	0.01									П	-	-					-	_	_	_			_	L			
Radium 226	0.05										-				H	H	-	_		_			L	L			
Gamma scan													_			L	_	_	L	_		_	L	L			
Other isotopes																	-	-	_	L	-	_					

Indicates the parameter was not detected above the Instrument Quantitation Limit

Quantitation is approximate due to limitations identified during the quality control review

Value is rejected due to other contractual criteria examined during the quality control review

Value is rejected due to blank contamination identified during the quality control review

Detection Limit in PicoCuries per Liter (pCi/L)

EG&G ER Program Rocky Flats Plant

0052L/rk44

Acceptable with qualifications

Rejected

Data Qualifier

Valid

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RADIOCHEMICAL ANALYSIS ANALYTICAL RESULTS (PCI/L)

Page 4 of 4

TABLE #: E89-0052 SITE NAME: Area 2 - Hillside

Sample Location	<u> </u>	Reagent Blank	Blank	Reage	Reagent Blank	Reag	Reagent Blank	_		_							L	L		
Sample Number								_		-				F				l		
Sample Date								_		-			_	-				+		
Matrix	_	Water		Water		Water		_		_			_	-				H		
	占					L		_					L	-				1		
Parameter	징	Val.	- /+	Val.	+	Val.	‡													
Gross Alpha	2	_			_			_				_			H	L		_		
Gross Beta	4	\mid						_			_	_		\vdash	\vdash	-		-	L	-
Total Strontlum	F	H	_					-			-	_		\vdash	L	-		-	-	+
Total Cesium	-	_			-			_			_	_			-	-		\perp		-
Radium 228	-							_		ig	-			-	-	-				\vdash
Tritlum	400 250 U	093		260 U		270 U				_		_			_			\mid	-	
Uranium 234 & 233	9.0				_				_	_	_	L		-	L	L			\vdash	-
Uranium 235	9.0													-	-	-			-	╀
Uranium 238	9.0		/					_		_		_			-				-	ŀ
Plutonium 239 & 240	0.01							_				L		-	_			-	-	-
Americium 241 & 242	0.01							_		-		_		-	_			-	-	-
Radium 226	0.05											_		-	-			-	-	-
Gamma scan														_		_			-	
Other Isotopes								_			L	L		_		L		\vdash	ŀ	_

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Rejected

0052L/rk44

Data Qualifier

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Detection Limit in PicoCuries per Liter (pCi/L)

EG&G ER Program Rocky Flats Plant

Radiochemical Data Completeness Checklist for Tritium Analyses of Soil and Water

Α.	Yes Case Narrative
	Yes Abnormalities explained
	Yes Matrix Problems explained
	Yes Instrument problems explained
	Yes Improper collection, storage, preservation, container explained
	Yes Hold times met, explained if not met
В.	Yes Initial and Continuing Calibration Data Package
	Yes Detector ID with Program Settings
	Yes Date of Performance Check
	Yes Batch Number
	Yes NIST Traceable Reference Material certificates
	Yes Quench Monitor Values and CPM for Standard used to check
	long term performance of cocktail and instrument
	Yes Background-Blank vials CPM Results
_	TV D I D D D D D D D D D D D D D D D D D
C.	Yes Reagent Blanks Data Package
	Yes ID of each detector used
	Yes Analyst initials
	Yes Date reagent blanks were analyzed
	Yes ID of samples analyzed with the reagent blanks
	Yes Type of method blank used, MDA of method
	Yes Volume of aliquot for reagent blanks
D.	Yes Replicate Sample Data Package
D.	Yes ID of each detector used
	Yes Analyst Initials
	Yes Date sample and replicates were analyzed
	Yes Collection Date
	Yes Sample IDs, values obtained for sample and replicates
	Yes Count Durations of sample and replicates
	Yes Volume of aliquot for sample and replicates Yes Calculated uncertainties and MDAs
	1es Calculated uncertainties and vidas
E.	Yes Lab Control Samples (LCSs) Data Package
	Yes ID of each detector used
	Yes Analyst initials
	Yes Date LCSs were analyzed
	Yes ID of LCS
	Yes Values obtained for LCSs with uncertainty and MDA
	Yes True value of LCSs with uncertainty
	Yes ID of samples analyzed with the LCSs

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F.	Yes Minimum Detectable Activity Yes Background Measurements including: counts and count durations of samples and backgrounds taken during the same weekly time period
	Yes Date of analysis
	Yes Background CPM Yes MDA calculated for each isotopic analysis for the sample
G.	Yes Quench and Efficiency
	Yes Quench Monitor used
	Yes Quench Monitor Values and Efficiency Values
	Yes Date of last quench curve check
	YesDetector ID
	Yes NIST Traceable Reference Material certificates used
	to determine detector efficiencies and quench
	Yes Batch number and sample IDs; Efficiency standard and
	backgrounds used
	Yes Volume added to cocktail, cocktail used, and vials used
	Yes Instrument settings used when detector efficiencies and
	quench curve were run
H.	Yes Sample Data Package
	Yes Printed Report of results for sample, reruns
	Yes Computer calculations sheet including: sample IDs,
	isotopes of interest, counts obtained for samples, background
	counts obtained, sample aliquot, collection date, count date,
	count duration, detector efficiency, and activities obtained
	for samples, uncertainties, and MDAs
	Yes Raw Data from counter, copies of notebook pages
	Yes Instrument log to identify the sample ID with the raw data
	from the counter

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